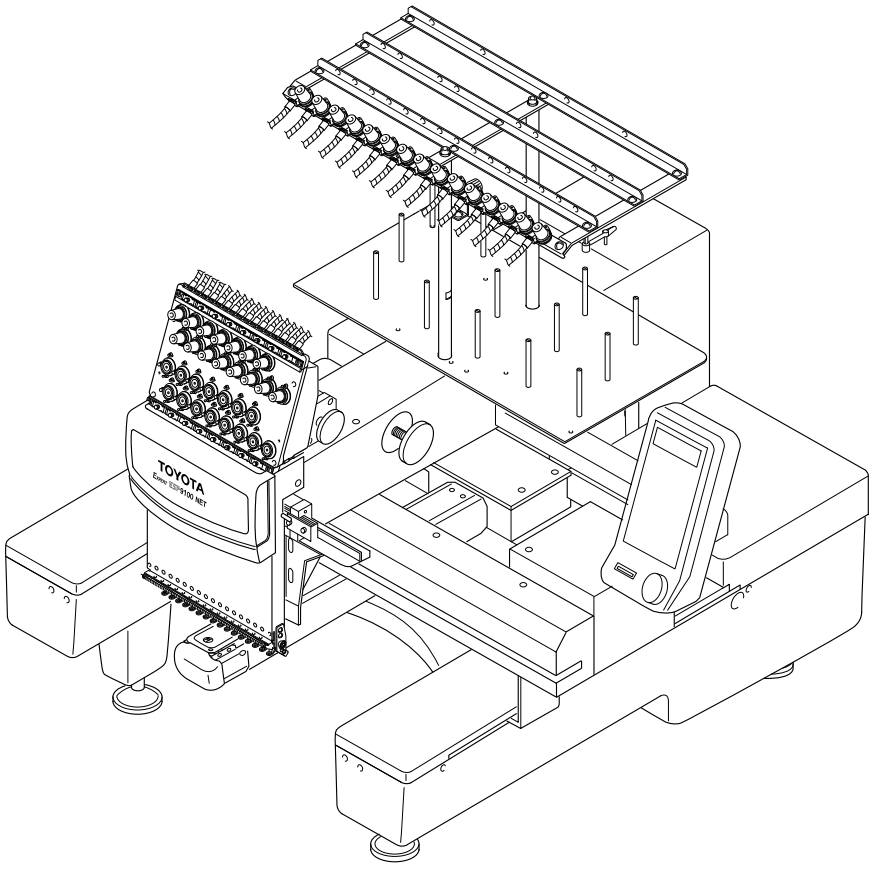
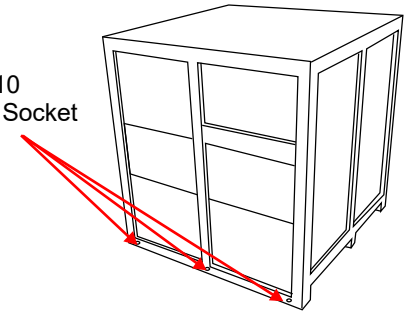
TOYOTA

TOYOTA EMBROIDERY MACHINE SETUP AND TRAINING GUIDE

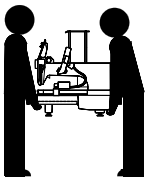


CHAPTER 1
MACHINE INSTALLATION
UNCRATING AND SETUP



1. Remove 6 screws at the bottom of the crate with a #10 metric socket and lift crate upward.

2. Lift machine by slots underneath, making sure not to lift by table.



3. Assemble Stand and install machine onto stand. Assembly instructions for the stand are located in the box. Use a wrench to loosen the leg bolts on the bottom of the machine and remove them. There are 4 short stubby bolts in the bolt bag. We will use these to bolt the machine to the stand. Have a person guide the machine onto the stand and steady it while another person screws the bolts into the machine base.

4. Store your crate as it may be required for a warranty repair.

5. Use one of the allen wrenches from your Toyota tool kit and raise the thread rack to the line on the bar and tighten. Refer to page 11 of the instruction manual.

6. Get the bobbin case from the tool kit and put a bobbin in it, then install into the machine. Refer to page 17 of the instruction manual.

7. Load the machine with 15 cones of thread. The embroidery machine is prethreaded, so you should tie the cone of thread to the prethreaded thread with a square knot. A square knot will pull through the eye of the needle. Now pull gently on the thread at the needle until the knot pulls through. Trim the thread and place it in the long spring above the needles. If the thread comes untied and you are faced with rethreading the entire thread, refer to pages 15 and 16 of the instruction manual.

CHAPTER 2
LET'S LEARN THE MACHINE

1. Hoop a stable fabric with two layers of cutaway backing.
   Refer to page 18 of the instruction manual.

2. INPUT DESIGN FROM A FLASH DRIVE

   1. Insert flash drive into the USB port on the embroidery machine (2 GB or larger must be formatted FAT. Not FAT32)

   2. Press DATA menu — ☞ Press

.

   3. Select FD for 1. INPUT DATA by pressing the left or right hoop travel keys — ◀ and ▶ (hoop travel keys)

   4. Press SET to read from the flash drive — ☞ Press SET.

   5. Select the design data by pressing the up or down hoop travel keys — ▲ and ▼ (hoop travel keys)

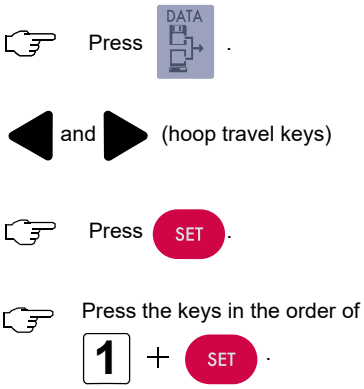
   6. Press SET to input the selected design — ☞ Press SET.

CHAPTER 2

LET'S LEARN THE MACHINE (continued)

3. INPUT A DESIGN FROM THE PC

1. Send the design data from the stitch software
2. Press DATA menu
3. Select PC for 1. INPUT DATA by pressing the left or right hoop travel keys
4. Press SET to read from the PC
5. Press the design number
6. Press SET to input the selected design



4. INPUT COLORS

After the design is loaded into the machine memory, enter the desired color by pressing the numbers on the panel. For needles 1 to 9, press the corresponding number on the panel. For needles 10 to 15, press 10+0=10,10+1=11…..10+5=15. Needle 10 will show on screen as A, needle 11 will show as B,... needle 15 shows as F. Enter all colors, then press SET.

Example: **123FBACDE** means you enter color **1**,**2**,**3**, **15,11,10,12,13,14.**

5. TRACING THE DESIGN

1. This function makes the hoop travel along the rectangle that surrounds the embroidery range. Tracing will start from the design start point and move to the rear right, rear left, front left and front right corners of the embroidery range, then return to the design start point. (fig. 2) On the Toyota ESP9100 there is an option to trace using the actual shape of the design rather that tracing a Rectangle.The function is in the HOOP menu. On #7 in the HOOP menu, press the left or right hoop travel keys to switch between "RECT or LINE" tracing. (fig. 3)

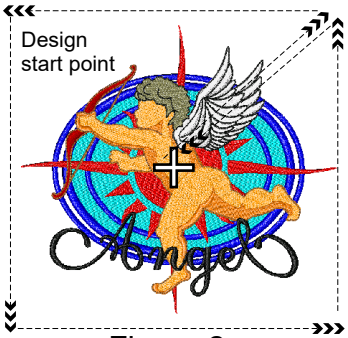


Figure 2

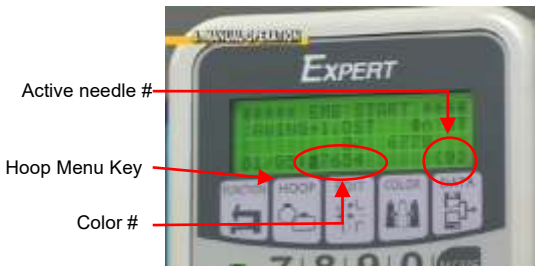


Figure 3

After the colors are entered press the **TRACE** option key to make sure the design fits inside the hoop. *When tracing, use the active needle as your reference point.* The active needle number is located in the lower right corner of the control panel screen. (fig. 3)

CHAPTER 2

LET'S LEARN THE MACHINE (continued)

6. SEW OUT TEST EMBROIDERY

While sewing a test embroidery, check the upper and lower thread tension (see #7 below) Use all needles to discover any problems with tension or thread path. Make sure the thread is following the correct path and is not tangled.

7. TENSION AND BOBBIN ADJUSTMENT

BOBBIN TENSION

Remove the thread from the pigtail and allow the bobbin case to be suspended by the tension spring. Then give a firm snap of the wrist similar to using a yoyo. A length of thread will be pulled from the bobbin. Ideally, a good firm snap of the wrist will produce 4 to 6 inches or 10 to 15 cm of bobbin thread.

If the drop test results in a longer length, it is a good idea to tighten the bobbin slightly. The big screw on the tension spring tightens the bobbin tension by a slight clockwise, maybe a quarter turn to the right. If the drop test results in less than 4 to 6 inches, the bobbin may need to be loosened. To loosen, turn the tension screw a quarter turn to the left.

Once the drop test gives you 4 to 6 inches or 10 to 15 centimeters, re-wrap the thread twice around the pigtail and trim it to roughly a 2 inch length. Then replace the bobbin case securely in the machine. Listen for the click to know it is securely in place. Once the bobbin tension has been adjusted, you will rarely need to readjust it. You may wish to perform the drop test when you replace the bobbin.

UPPER THREAD TENSION

Tension setting is not visual. Its done by feel.

a) Start with the tension knob at the fully loosened position.

b) To feel the tension, pull the thread through the presser foot. One normally pulls a foot or two at a time. Large amounts not small.

c) Turn the tension knob tighter by two turns.

d) Check the tension by pulling. The correct top tension should be slightly tighter than the bobbin tension.

e) If the tension feels loose, simply tighten one turn at a time until you get the desired tension.

Too tight of a tension causes puckering and thread breakage. Sometimes it can also cause needle breakage.

When white bobbin thread appears at the edge of a stitch, loosen your top tension.

If loose stitching occurs, tighten your top tension.

A perfect embroidery will have a "Thin Zipper" look of bobbin thread on the underside of the embroidery. Too tight of tension on top will cause the back of the embroidery to look heavy with bobbin thread. A well set tension will make the underside of the embroidery look almost as good as the top side.

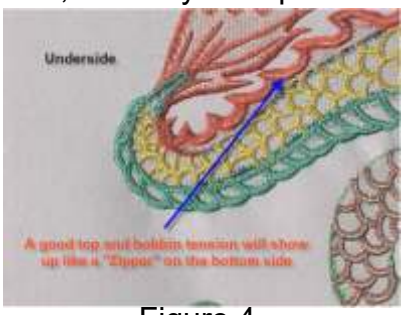


Figure 4

LOOSE AND TIGHT TENSION DEMONSTRATION

Loosen an upper tension knob and stitch to show loose tension.

Tighten an upper tension knob and stitch to show tight tension.

CHAPTER 2

LET'S LEARN THE MACHINE (continued)

8. NEEDLE REPLACEMENT

If you happen to break or bend a needle, or if a needle becomes dull, you will have to replace it. To replace a needle, loosen the set screw with a small screwdriver and remove the needle. (fig. 4) The front groove is a groove that runs the length of the needle. This groove must face forward. On the back of the needle is a cutaway portion called the scarf. This must be toward the back. (fig. 6)

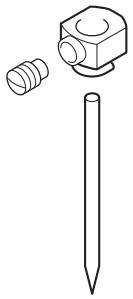


Figure 5

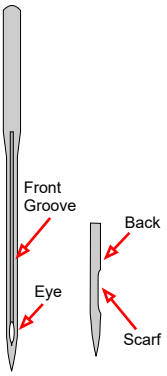


Figure 6

9. CUSTOMER HANDS ON

Now it's time to see what the customer has learned.

10. FUNCTION KEY SELECTIONS

1. SCREEN - Sets the information to be displayed during embroidering - number of stitches or speed.
2. THREAD SNS - Sets the thread break detection sensing level.
3. BOBBIN CNT - Sets the number of stitches for stopping the machine automatically. When the counted number of stitches reaches the preset number, the machine stops automatically.
4. LOCK ST - Sets "lock stitch" at the start and end of sewing.
5. SATIN ADJ - Sets the adjustment of satin stitch width.
6. SLOW START - Sets the number of main shaft rotations for which the main shaft rotates at a slow speed when starting sewing after thread trimming.
7. TRIM JUMP - Inserts thread trimming to stitches of consecutive jumps. When the number of jump signals appearing in succession reaches the set value, thread trimming is inserted.
8. JUMP LNGTH - Sets the length for converting stitches into jump. Stitches longer than the set length are converted into jump.
9. TRIM LNGTH - Sets the length of thread to be trimmed.
A. TRIM TMNG - Sets the timing for starting trim.

11. INSTALL AND ADJUST THE CAP SYSTEM

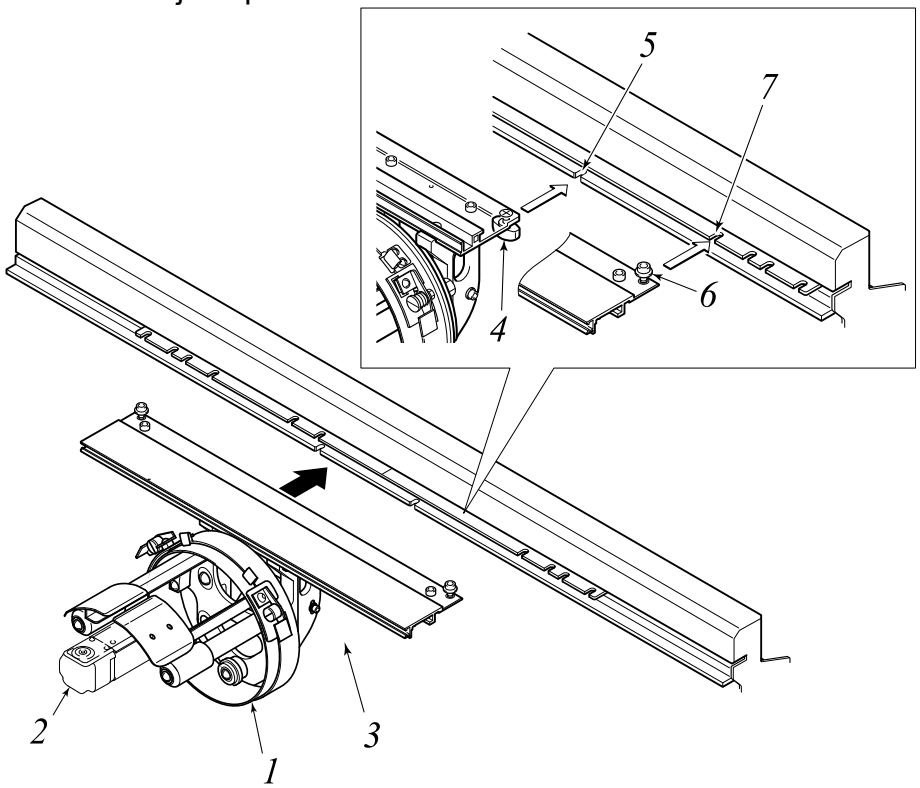
ADJUSTMENT

The cap system that came with your ESP9000 or ESP9100NET must be adjusted to your embroidery machine before use. If these adjustments are not made prior to the use of the cap system, unsatisfactory results or damage to your embroidery machine could occur.

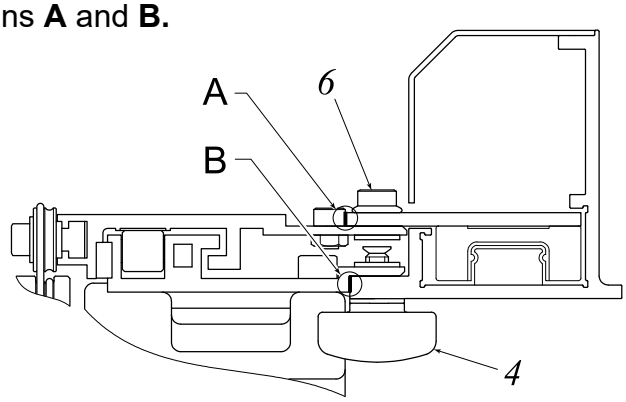
INSTALLATION

Loosen the screws **1** and remove the holder base **2** from the joint plate **3**.

1. Install the cap frame unit **3** so that the drive ring **1** fits on the bed **2**.
2. Set the attaching screw **4** of the cap frame base to the attaching part **5** in the X-driving unit, and the attaching screw **6** of the slide angle to the attaching part **7** of the joint plate.



3. Secure the attaching screws **4** and **6** and make sure there are no gaps at sections **A** and **B.**



4. When you turn on the embroidery machine, you must choose the type of hoop you're using. You have 4 selections (FLAT / CAP / SLEEVE / BORDER) Change the selection to CAP with the hoop travel keys and press SET. The machine will automatically rotate the embroidery design 180 degrees.

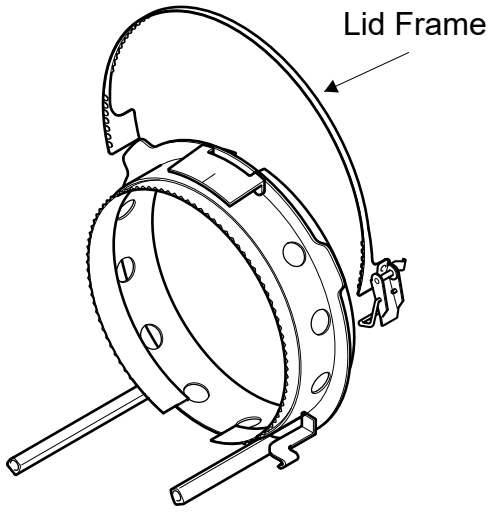
   More information is available in your Cap System Instruction Manual.

CHAPTER 2

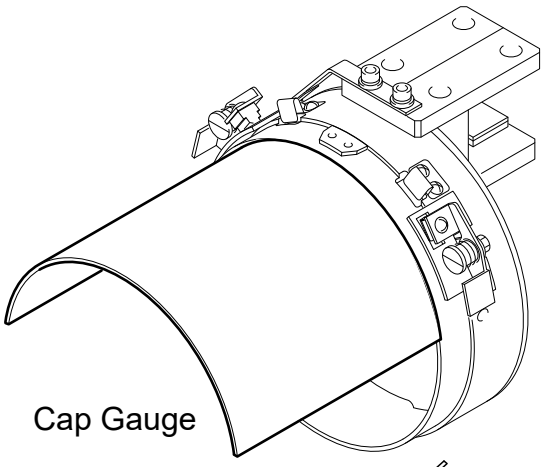
LET'S LEARN THE MACHINE (continued)

12. HOOP A CAP

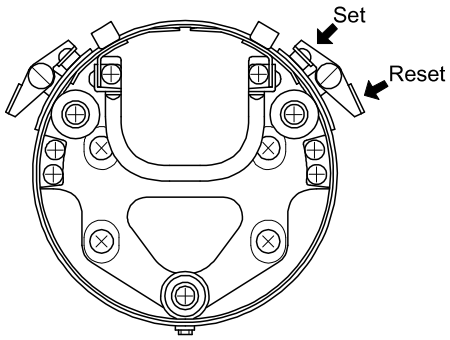
1. Attach the cap gauge to a table or sturdy surface.
2. Slide a cap frame onto the cap gauge and snap it into place.
3. Before hooping a cap, determine if the cap is structured or not. If it is a structured cap, no stabilizer is needed. If it is unstructured, you need to use a piece of tear away backing between the cap and the cap frame.
4. Take a cap and turn the sweatband inside out. Hold the cap snug by pressing down with your thumb on the back of the cap sweatband.
5. Guide the lid frame so the teeth fit into the seam where the bill meets the body of the cap. Clip the Lid frame on the hook and strap it down. Make sure the \ sweatband is still inside out and the center of the cap lines up with the center line of the cap frame.
6. Release the clips attaching the cap frame to the cap gauge and remove the cap frame.
7. Rotate the cap frame 90° and slide it onto the cap frame base making sure to click it in place. Make sure the bottom of the cap frame also clicks in place.
8. Now use the hoop travel keys to center the cap frame.



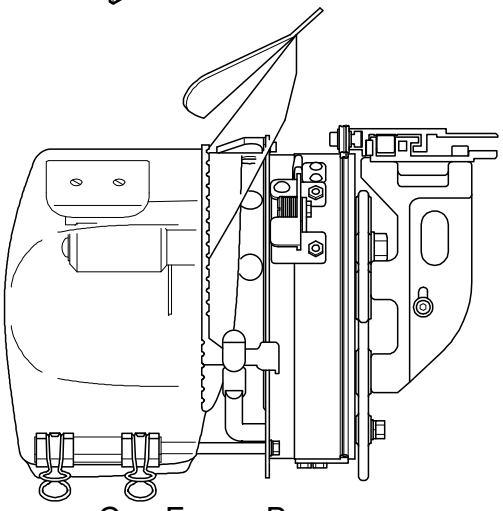
Cap Frame



Cap Gauge



Cap Frame Base



Cap Frame Base

CHAPTER 2

LET'S LEARN THE MACHINE (continued)

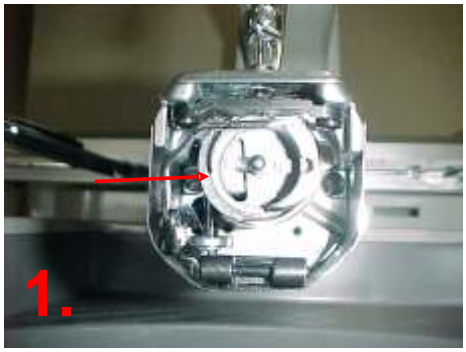
13. TEST SEW A CAP

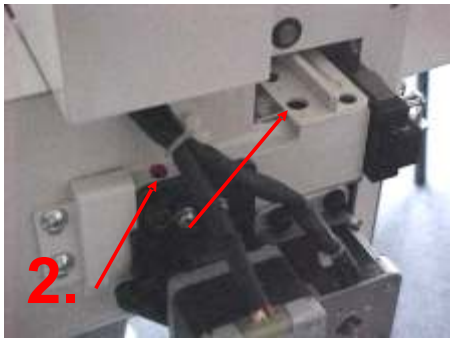
After the design has been input, perform a trace to be sure the design will fit on the cap without striking the cap frame. If you get a LIMIT ERROR, use the hoop travel keys to move the cap frame base forward or backward and then retrace until you get no error. Start the sewout.

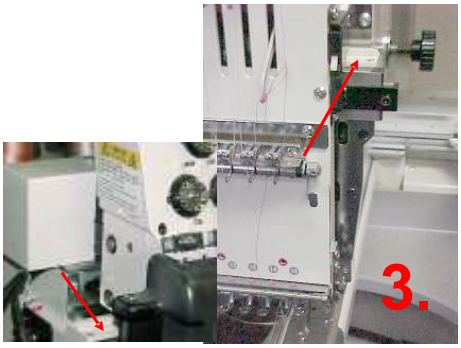
14. MACHINE LUBRICATION

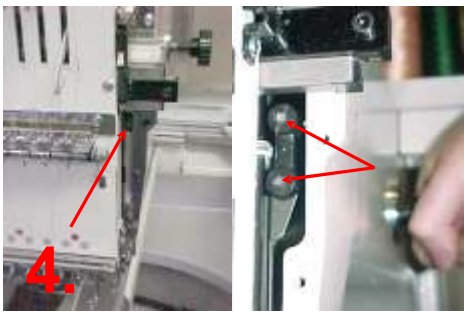
Lubrication Points	Interval
1 Rail on rotary hook	Every 3 to 4 hours of operation
2 Drive shaft of presser foot parts (2 places) 3 Needle bar drive shaft (2 places)	Every day
4 Needle bar drive shaft of presser foot 5 Inside the arm (3 places) 6 Needle bar	Once/week
7 Inside the cylinder bed 8 Felt packing (needle bar)	Once/3 months

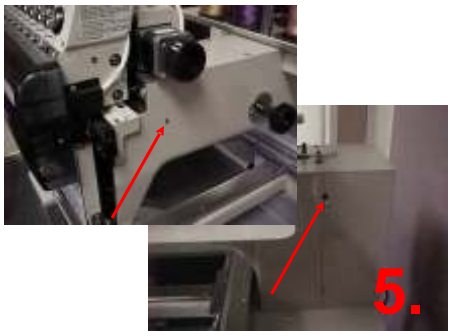
For the lubrication of rotary hook rails, the maintenance information is displayed on the LCD screen in the operation panel (Page 89).
If the maintenance information is displayed, turn the power switch OFF and supply lubricating oil to the rotary hook rails.
For other lubrication cycles, refer to the table in the left.

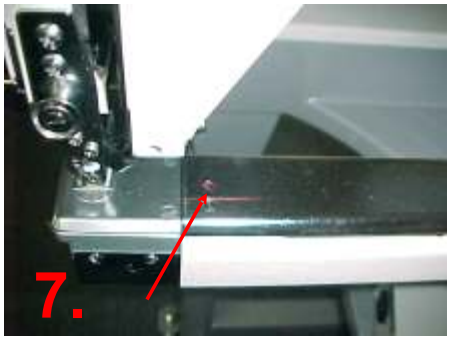












CHAPTER 3

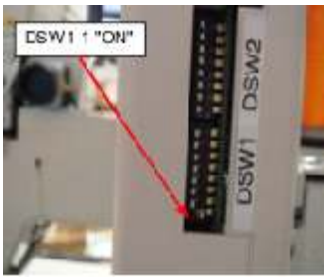
TROUBLESHOOTING

1. TEST MODE: INITIALIZE MEMORY

If your embroidery machine is setup to save all jobs sent, then it will eventually run out of room to save jobs. It will appear to be transferring a file but the transfer light will keep blinking until it gives an RS232 Connect Error. If this is the reason for the error, you will need to initialize the memory through the TEST MODE. **Please understand this Test Mode Initialize process will erase all data in your memory and will set the machine back to the factory settings.**

Follow these steps:

1. Turn machine power OFF



2. Flip Dip Switch DSW1-1 to ON

3. Turn Power ON

4. Test Mode will appear on screen.

5. Press SET key.

6. The following menu will appear:
   (1) PANEL Ver-----
   (2) MAIN Ver-----
   (3) XY Ver-----

7. Select (1) PANEL and press SET

8. The following menu will appear:
   (1) NETWORK SETTING
   (2) MAINTENANCE
   (3) MEMORY INITIAL

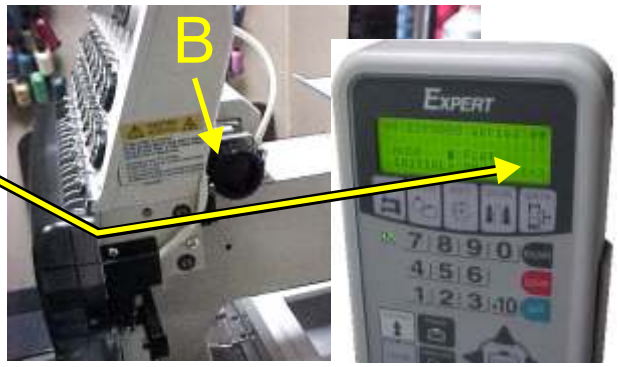
9. Select (3) MEMORY INITIAL and press SET

After the process is complete and the display shows the menu on Step 8, turn the power OFF and flip the dip switch DSW1-1 back to the OFF position.

2. NEEDLE CASE ERROR

When you see this error, press Stop. This will stop the beeping and will show the active needle as (-). Rotate knob B until a number or letter appears in place of the (-) such as 1, 2, 3, or A, B, ---, F.

Now press “SET”. This should clear the error and you can now use your embroidery machine as usual.



CHAPTER 4

COMPUTER QUESTIONS

Any modern PC will work but we need to know a few things before we arrive.

1. Which operating system do you have, Windows XP or Windows Vista?
2. Which method will you use to transfer designs to the embroidery machine?
    a. USB flash drive
    b. Serial cable and a serial port on your PC
    c. Serial cable with a USB/Serial converter to use a USB port on your PC
    d. Ethernet cable to a LAN port on your PC
    e. Wireless

We need these questions answered so we can have the correct cabling to connect the PC to your embroidery machine.

CHAPTER 5

SOFTWARE

STITCHITIZER

INSTALL STITCHITIZER

Insert the installation CD into your PC. The program will automatically install. Just follow the on-screen instructions.

OPEN A DESIGN AND TRANSFER

Go to FILE, OPEN and select a design to transfer. Click FILE, SEND TO COM PORT, and select the COM port you are using. If you are using Expert Stitch Manager, select FILE, SEND TO STITCH MANAGER, and then select either Machine Number or Layout Window. This will launch Expert Stitch Manager and the design will either be in the layout window or in the window ready to send, depending on how you sent the design.

STITCH PRO STI

INSTALL STITCH PRO STI

Insert the installation CD into your PC. The program will automatically install. Just follow the on-screen instructions.

OPEN A DESIGN AND TRANSFER

Go to FILE, OPEN and select a design to transfer. Click FILE, SEND TO COM PORT, and select the COM port you are using. If you are using Expert Stitch Manager, select FILE, SEND TO STITCH MANAGER, and then select either Machine Number or Layout Window. This will launch Expert Stitch Manager and the design will either be in the layout window or in the window ready to send, depending on how you sent the design.

CHAPTER 5

SOFTWARE (Continued)

EXPERT STITCH MANAGER

a. Insert the disk CD2 and locate the Expert Stitch Manager folder. In the folder is a file named **EMSver3_0_0.EXE.** Run this file to install the software. A box will pop up showing the installation directory. This is showing the location as the installation CD. Change this to Desktop. It will place the installation file on your desktop. Double-click this file and it will begin installating the software.

b. Open the software and explain the stitching Tabs **Stitch, Color, Order, Send**

Stitch: Review and selection of embroidery data.
Color: Setting and confirmation of thread color.
Order: Display and change stitch sequence of the selected data.
Send: Transfer embroidery data and monitor on-going.

c. Serial or LAN port configuration

Serial Connection

1. Connect your computer to the embroidery machine with a Serial Null Modem cable.
2. Open Expert Stitch Manager and open the Setting Menu. Click on Serial Port and press the Scan Ports button. The embroidery machine should be detected.

LAN Connection

1. Go to Manage Network Connections on the PC and choose Local Area Connections. Right-click on this connection and select Properties. Now choose **TCP/IP 4** and click on Properties. Select Manual configuration and set the IP address to:

IP address: 192.168.11.5
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.11.1

Settings on the ESP9100

1. Set the dip switch **8** in **DSW2 OFF** and switch **1** in **DSW1** to **ON.**
2. Turn the machine **ON**, then press **SET** when the screen reads **TEST MODE**, Press **SET** in **PANEL**.
3. Press **SET** on **NETWORK SETTING** to select **LAN** as **PORT** and **TCP/IP** as **MANUAL**
4. Then on the **IP ADDRESS** press **SET** and set the address as follows:
   IP as: **192.168.11.2**
   MASK as: **255.255.255.0**
   GATE as: **192.168.11.1**
5. Press **SET** and scroll down below **IP ADDRESS** and set the **MACHINE#** to **1** Press **SET.**
6. Turn **OFF** the machine and reset Dip switch **DSW1-1** to **OFF**.
7. Connect the LAN cable and then turn **ON** the machine. In Expert Stitch Manager, Click **Rescan TCP/IP Port**. The embroidery machine should show up when you click on the Send icon in the upper right corner.

To send a design to the embroidery machine, click the Stitch icon on the right to open your **DST file**. When you locate it, drag it over to the large screen on the left. Now click on **SEND** icon on the top right. Drag the stitch image to the gray rectangle in the send area. Now Press the arrow between the design and the embroidery machine image.

CHAPTER 6

SOFTWARE OVERVIEW: UNDERSTANDING THE LAYOUT

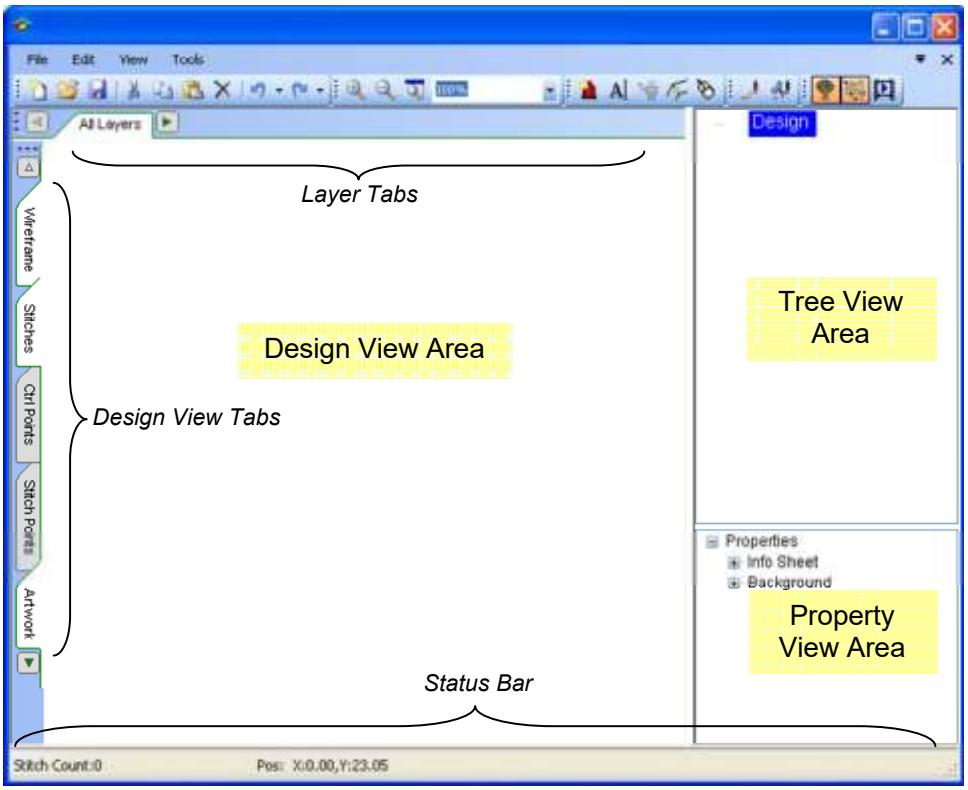
STITCHITIZER & STITCH PRO STI

a. Overview of Use

Stititizer and Stitch Pro STI are used to create or modify embroidery designs that can subsequently be loaded into a variety of embroidery machines to produce those designs. Hence, there are generally three main procedures that are done to accomplish this goal. They include the creation of basic lettering designs and the creation of embroidery designs to reproduce custom artwork. This involves what is referred to as on-screen digitizing where the user reproduces artwork as embroidery by specifying where and how groups of stitches should be sewn. Thirdly, the process of editing or taking an embroidery design already produced by one of the first two methods and effectively changing it to meet new requirements like changing its size, positioning, color changes, etc. The User Guides for these software programs should be read thoroughly.

b. Working Window

When the software is first opened, an empty window will appear. If the New Document button is pressed or if you click on File, New, a blank design area is shown with two adjacent areas to the right. Some of the features shown may not be available in Stitchitizer. See the image below .



The left portion of the window (the Design View Area) is where the Embroidery design is created and displayed. Also along the left and top edges of this view are Design View Tabs and Layer Tabs. The Design View Tabs allow different information to be shown within the Design View. For example, if the Stitches tab is selected, the design's stitches will be displayed in the Design View. The upper right portion of the window contains a Tree View of the current design. This means it will list everything in your design in order. It may be expanded or collapsed as desired to examine, select, or move specific parts of a design. The lower right portion of the window contains the Property View area. This area changes based on what is currently selected within the document and subsequently allows various properties to be modified.

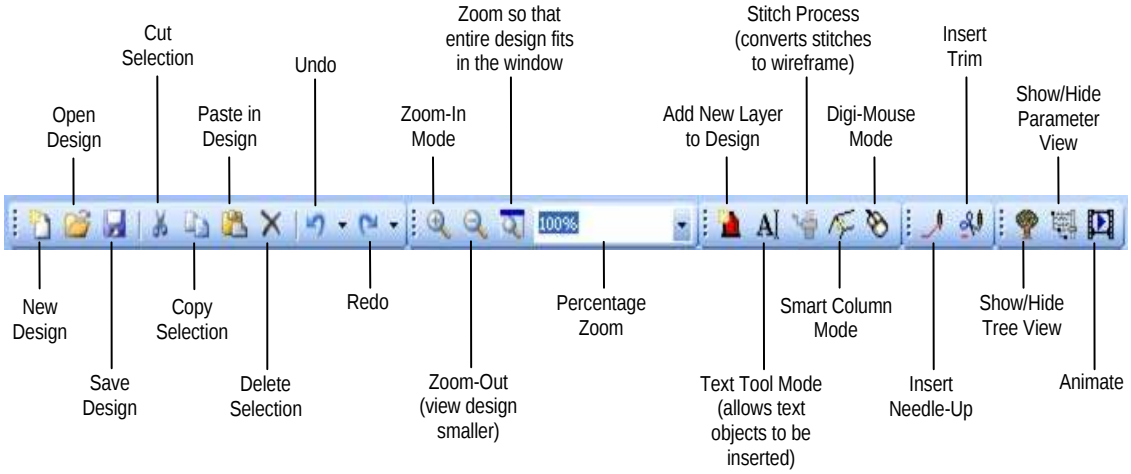
CHAPTER 6

SOFTWARE OVERVIEW: UNDERSTANDING THE LAYOUT

STITCHITIZER & STITCH PRO STI (Continued)

c. Tabs/Toolbars Overview

Shown below are images of the toolbar buttons and tabs with brief descriptions of their purpose. Refer to the User Guides for a full explanation of each button.



Wireframe Tab (shown as selected)
When this tab is selected, the outlines of a design are displayed within the design view. These outlines are displayed using the same color of the related design elements they represent. Outlines are indicative of the boundaries within which the embroidery is created.

Stitches Tab (shown as selected)
When this tab is selected, the stitches in a design are displayed within the design view. These stitches are displayed as small line segments using colors that match the wireframe outlines.

Control Points Tab (shown as de-selected)
When selected, control points that define the design outline/wireframe are displayed within the design view. These control points typically appear as either white, blue, green or yellow dots. When displayed, they may be easily modified by clicking or dragging them using the mouse cursor.

Stitch Points Tab (shown as de-selected)
When selected, stitch points that define the start and end points of each stitch are displayed within the design view. These stitch points typically appear as either black, yellow, purple or multi-color dots representing the end points of normal, jump, trim or color change stitches respectively.

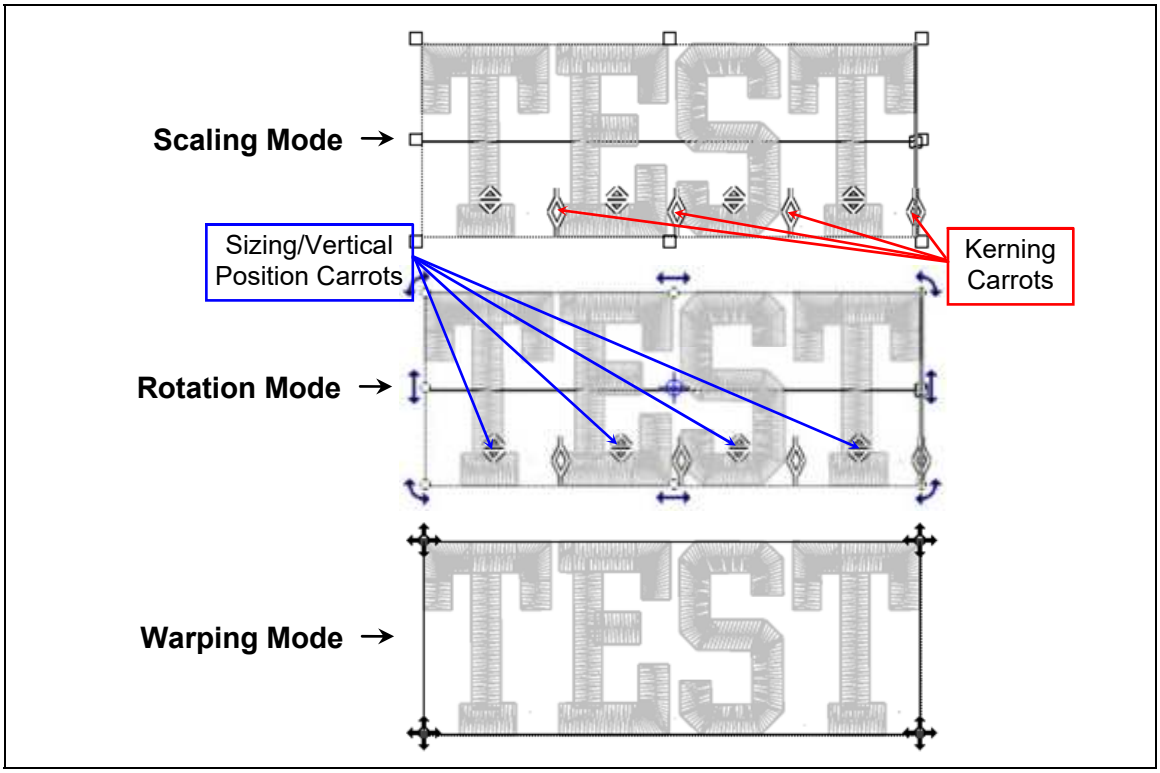
Artwork Tab (shown as selected)
When selected, the imported artwork (typically used when doing on-screen digitizing) is displayed within the design view. This artwork is displayed beneath any other items being shown (e.g. wireframe, etc.). When no artwork has been imported, selecting or de-selecting this tab has no effect on the design view.

CHAPTER 6

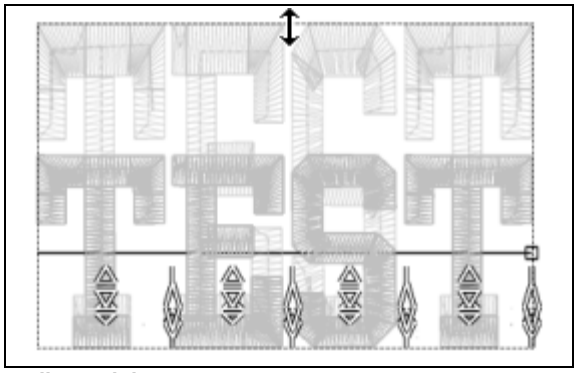
SOFTWARE OVERVIEW:

TEXT TOOLS

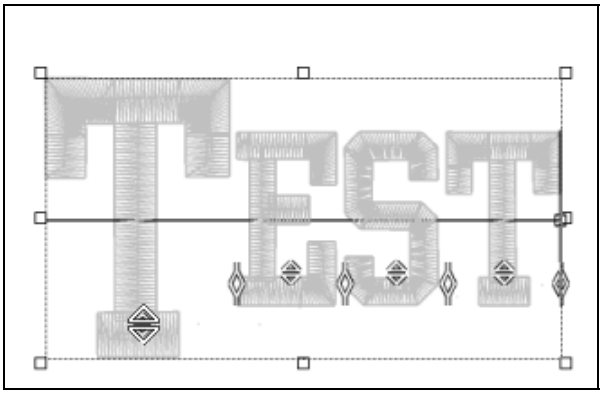
1. Click on the Add New Layer button. This will insert a new empty layer in which a new text object will be placed.
2. Click on the Text Toolbutton. This will allow you to insert text within the design, but first notice that when the Text Tool button is pressed, the Property View automatically changes to display Text Object properties. Select the Font by clicking on the name. This will open a drop down list box that you can scroll through to see all available font styles.
3. Float the mouse cursor over the Design View and notice that the cursor changes indicating that the program is still in Text Insert mode. If the mouse is clicked, it will automatically insert a text object centered at the position that was clicked and wait for you to type letters.
4. To adjust spacing more precisely each of the kern carrot icons ( ) may be clicked and dragged left or right to adjust the spacing between the two corresponding letters. If the kern carrot after the last letter is dragged, it will uniformly adjust the spacing between all of the letters within the text object.
5. Once the spacing is adjusted, the entire text object may be moved by clicking and dragging anywhere within its boundaries that is not on a specific icon such as a kerning carrot.
6. Change the color of the added lettering by first selecting the Layer within the Tree View that contains the text object. Then, expand the Appearance properties within the Property View by clicking the “+” next to Appearance. The colored box to the left of Display Color may then be clicked to pick a new color within a small dialog box.
7. Once lettering is inserted, it may be further manipulated on within the Design View window using a variety of icons placed on top of or around the edges of the lettering object. It can also be manipulated using the text object properties within the Property View. Presented here is a description of the various manipulations possible.



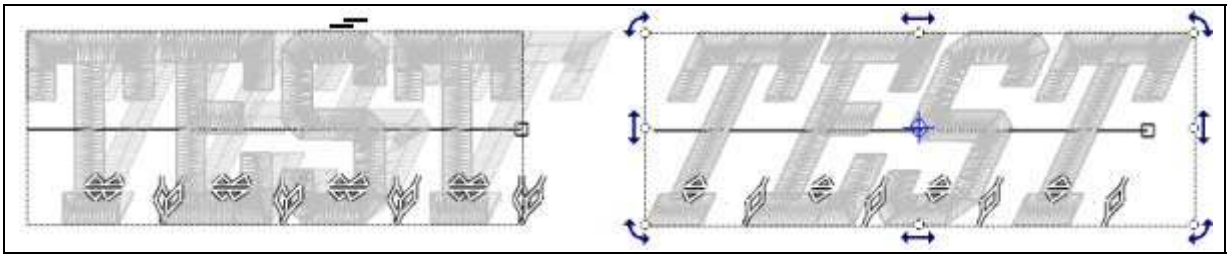
Object Modes. Red arrows point out examples of kerning carrots while the blue arrows point out examples of sizing/vertical position carrots.



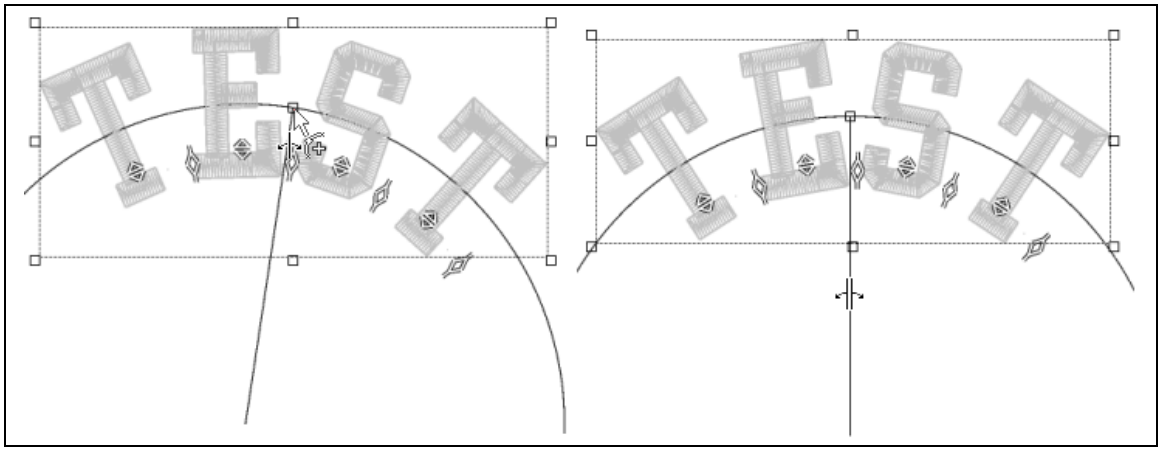
Scaling Height.



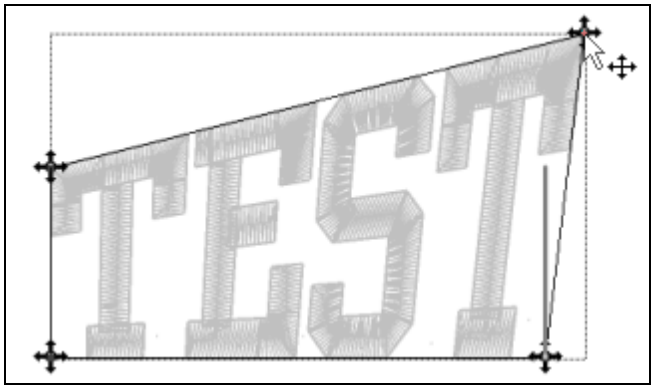
Example use of Sizing/Vertical Positioning Carrots. Left figure show result when mouse wheel is moved as the mouse cursor hovers of the first T's carrot. The right side shows the result as this same carrot is clicked and dragged upward (using the left mouse button).



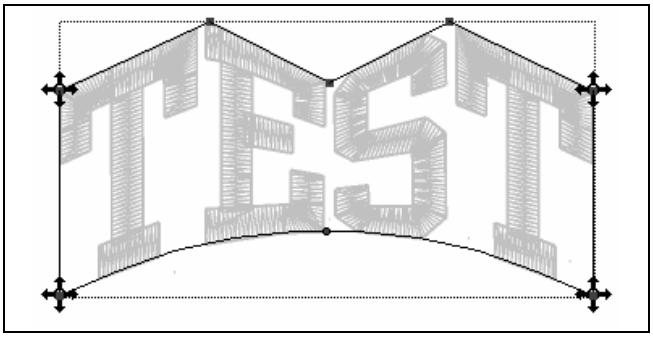
Object skewing.



Text arcing using the mid-line. On the left, the result is shown when dragging the mid-line upward to create an arc. On the right, the result is show when dragging just the line emanating from the arc's center to adjust the center position of the letters on the arc.



Simple warp example using corner point.



Warping by inserting points and arcs.

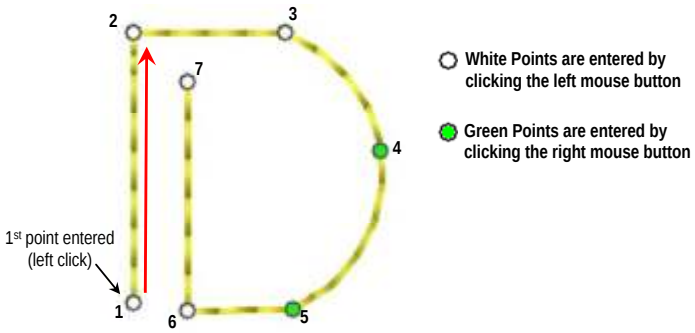
CHAPTER 6

SOFTWARE OVERVIEW:

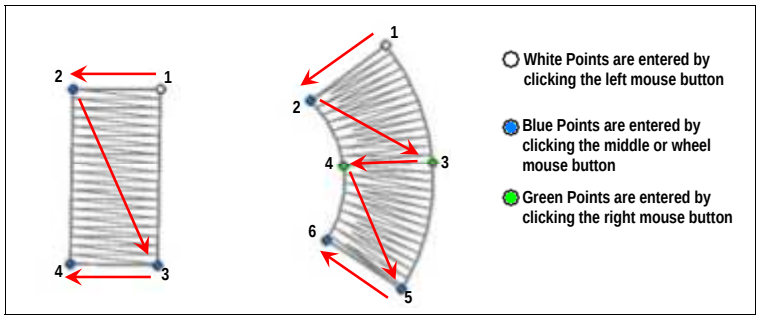
DIGITIZE A LOGO

a. Determine size colors layers, paths, and stitch types before beginning.
b. Explain density, column width and other digitizing tools.
c. Explain the 4 basic stitch types. Running, fill, column and curve column
d. Show how to edit.

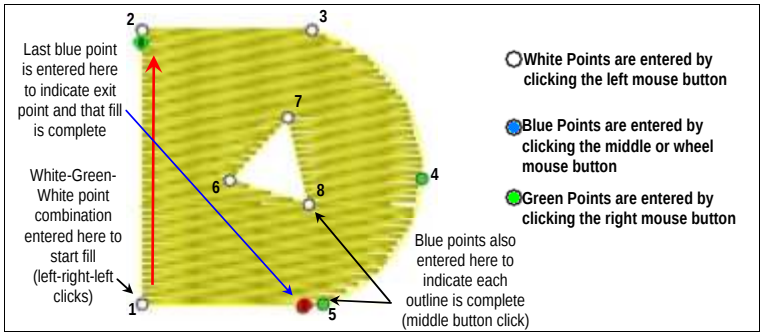
EXAMPLES



Creating straight stitching with control points.
Red arrows and numbers indicate the order in which the points were entered/clicked with the mouse. The color of each point indicates which mouse button was clicked.



Creating column stitching with control points.
Red arrows and numbers indicate the order in which the points were entered/clicked with the mouse. The color of each point indicates which mouse button was clicked.

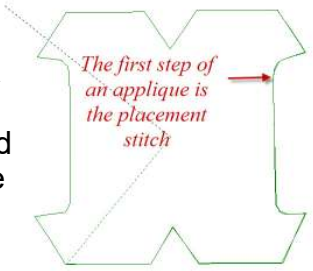

2
3
Last blue point is entered here to indicate exit point and that fill is complete
7
White-Green-White point combination entered here to start fill (left-right-left clicks)
6
8
4
1
5
Blue points also entered here to indicate each outline is complete (middle button click)
White Points are entered by clicking the left mouse button
Blue Points are entered by clicking the middle or wheel mouse button
Green Points are entered by clicking the right mouse button

Creating fill stitching with control points.
Red arrows and numbers indicate the order in which the points were entered/clicked with the mouse. Note: the 'B' and 'E' points indicate where the first and last stitches of the fill are created.

CHAPTER 6

SPECIALTY TECHNIQUES

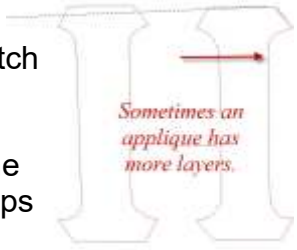
1. APPLIQUE-TACKLE TWILL



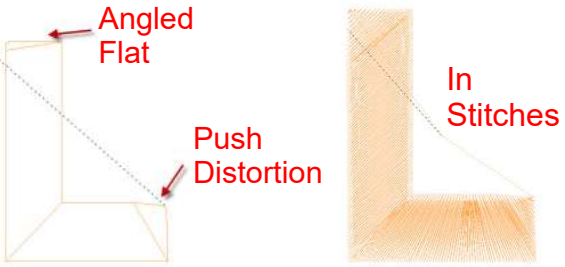
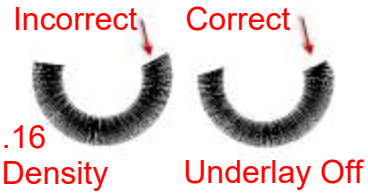
A tackle twill design will have at least 2 layers. The first layer will be an outline of the design. This will be used as a guide for placement of your twill fabric. The second layer will be the zig-zag or satin stitch that borders the design and holds it down. There may be other layers depending on the design and its complexity.

Hoop and load your garment as you would for normal embroidery. Start by sewing the first color of the tackle twill design, the placement stitch. This will sew an outline of the first layer of tackle twill. Using the stitched outline as a guide, adhere the tackle twill to the garment with glue stick, a strip of double side tape, or if your tackle twill was purchased precut, you can iron it on. Be sure to apply the tackle twill carefully. The more accurately is it aligned, the better the finished product will look.

Begin sewing the next color. The embroidery machine will begin sewing the tackle twill in place using a satin stitch or zig-zag stitch. This embroidery will cover the tackle twill edges, giving the product a finished look. Even though the designs may vary greatly, the basic steps remain the same for each design you produce with tackle twill.



2. 3D FOAM



Brush Script lettering is popular for puff, but if a font with open ends is used, remember to edit your stitch points to close off those areas. To do this you can make the column stitches at a slight angle so that the end of the column isn't open. If they are left open, the foam tends to stick out the end and the foam will not be cut. Don't use underlay in the areas where the foam will be added. All short stitches (those not going all the way to the edge of the column) will have to be moved so that all stitches follow the same edge. Next, set your density to .16mm. Lay a piece of craft foam over the area you will stitch. The embroidery will hold down the foam and the needle penetration will cut the foam. When finished, pull the excess foam off the embroidery.